

WHAT IS CLAIMED IS:

1. A image display apparatus having a display unit composed of a plurality of pixels and a control unit for controlling the display unit, further comprising:

5 a DA converter for converting the digital display data into an analog image signal,

wherein said DA converter is composed of a first DA converter and a second DA converter, the Power consumption when said first DA converter is operated being smaller than that when said second DA converter is operated,

10 wherein said DA converter operates either of said first DA converter and said second DA converter according to the instruction from said control unit, and outputs the converted analog image signal to said display unit, and

15 wherein said display unit changes the number of the independent display pixels of said display unit according to the instruction from said control, and displays according to said analog image signal.

2. A image display apparatus according to claim 1, wherein a gate line shift register for controlling the scanning of the display unit is connected to said display unit, said control unit outputs the instruction to said gate line shift register, and the number of independent display pixels of said display unit is changed by the gate line shift register, and a image is displayed.

3. A image display apparatus according to claim 2, wherein said control unit gives an instruction to said DA converter and the gate line shift register according to the mode switch instruction.

5 4. A image display apparatus according to claim 3, wherein said mode switch instruction has a first mode for carrying out the conversion processing by said first DA converter and a second mode for carrying out the conversion processing by said second DA converter, a pixel of said display unit is arranged corresponding to the region enclosed by plural gate lines and plural signal lines arranged to intersect with the plural gate lines, the gate line shift register controls at least two gate lines of said plural gate lines at the same timing in said first mode, and said first DA converter outputs one converted analog image signal to at least two signal lines.

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5. A image display apparatus according to either one of claims 1 to 3, further comprising two memories each having different capacity,

wherein the two memories correspond to said first DA converter and said second DA converter, respectively.

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6. A image display apparatus according to claim 5, wherein said display unit, said DA converter, said gate line shift register, and the memory having small capacity among said memories are arranged on the same substrate, and the memory with small capacity is formed by using 25 polysilicon.

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7. A image display apparatus according to claim 6, wherein said memory with small capacity corresponds to said first DA converter, and the memory with large capacity corresponds to said second DA converter.

8. A image display apparatus according to either one of claims 1 to 7, wherein said first DA converter and said second DA converter each convert the input signal into an analog image signal with different number of bit, respectively.

9. A image display apparatus according to either one of claims 1 to 7, wherein said first DA converter and said second DA converter each convert the input signal into an analog image signal with different maximum drive frequencyt, respectively.

10. A image display apparatus according to either one of claims 1 to 9, wherein said first DA converter outputs an analog image signal with binary gradation.

11. A image display apparatus according to either one of claims 1 to 10, further comprising an illumination means for supplying light to said display unit,

wherein the illumination means supplies light to said display unit

25 in said second mode.

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12. A image display apparatus comprising:
a display unit composed of plural pixels;
a control unit for controlling the display unit;
5 the image display apparatus further comprising a DA converter
for converting digital display data into an analog image signal,

wherein said DA converter includes a first DA converter and a
second DA converter, and

10 wherein said first DA converter and said second DA converter
each convert the input signal into an analog image signal with different
number of bit, respectively.

13. A image display apparatus according to claim 12, wherein either
one of said first DA converter and said second DA converter converts
15 digital data into an analog image signal in accordance with an instruction
from said controller.

14. A image display apparatus according to claim 13, wherein said
control unit gives an instruction to either one of said first DA converter
20 and said second DA converter in accordance with the mode switch
instruction.

15. A image display apparatus according to either one of claims 12 to
14, further comprising two memories each having different capacity,
25 wherein the two memories correspond to said first DA converter

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and said second DA converter, respectively.

16. A image display apparatus according to either one of claims 12 to 15, wherein said display unit, said DA converter and the gate line shift register are arranged on the same substrate, the shape of said display unit is rectangular, and the first DA converter and the second DA converter of said DA converters are arranged in the top and bottom of said display unit.

10 17. A image display apparatus according to claim 15, wherein the
memory with small capacity of said two memories is arranged on the said
substrate, and the memory with small capacity is formed with
polysilicon.

15 18. A image display apparatus according to either one of claims 15 to
16, wherein said mode switch instruction has a first mode for carrying
17, out the conversion processing by said first DA converter and a second
18, mode for carrying out the conversion processing by said second DA
19, converter, and wherein said memory with small capacity corresponds to
20, said first DA converter, and the memory with large capacity corresponds
21, to said second DA converter.

19. A image display apparatus according to either one of claims 13 to
18, wherein said display unit changes the number of the independent
25 display pixels of said display unit according to the instruction from said

control, and displays according to said analog image signal.

20. A image display apparatus according to either one of claims 12 to 19, wherein said first DA converter outputs an analog image signal with 5 binary gradation.

21. A image display apparatus according to either one of claims 12 to 20, further comprising an illumination means for supplying light to said display unit,

10 wherein the illumination means supplies light to said display unit in said second mode.

22. A image display apparatus comprising:
a display unit composed of plural pixels;
15 a control unit for controlling the display unit;
the image display apparatus further comprising a DA converter for converting digital display data into an analog image signal,

wherein said DA converter includes a first DA converter and a second DA converter, and

20 wherein said first DA converter and said second DA converter each convert the input signal into an analog image signal with different frame frequency, respectively.

25 23. A image display apparatus according to claim 22, wherein either one of said first DA converter and said second DA converter converts

digital data into an analog image signal in accordance with an instruction from said controller.

24. A image display apparatus according to claim 23, wherein said control unit gives an instruction to either one of said first DA converter and said second DA converter in accordance with the mode switch instruction.

25. A image display apparatus according to either one of claims 22 to 24, wherein said first DA converter outputs an analog image signal with binary gradation.

26. A image display apparatus according to either one of claims 22 to 25, further comprising an illumination means for supplying light to said display unit.

wherein the illumination means supplies light to said display unit in said second mode.